CHAPTER 1: INTRODUCTION

Table of Contents

OVERVIEW 1
ESHB 2514/ESHB 2496 1
LOWER NISQUALLY WATERSHED ASSESSMENT STUDY AREA 2

List of Tables

Table 1-1. Sub-basin area. 3

List of Figures

Figure 1-1. Water Resources Inventory Area (WRIA) 11 showing sub-basins used in this assessment. Data Sources: Washington Department of Natural Resources (WDNR): Sub-basins (modified from WAU coverage), fish-bearing streams, water bodies, and WRIA boundaries; Washington Department of Transportation (WDOT): county lines, city boundaries. 4

Prepared by:

Domoni Glass
Ed Salminen

CHAPTER 1: INTRODUCTION

OVERVIEW

The purpose of this document is to provide a Level 1 assessment of the Lower Nisqually Basin Watershed per ESHB 2514. Through this process, gaps in available data are identified and recommendations for Level II analyses are developed. Chapter 2 of this document provides an overview of the basin geology, soils, precipitation, and land use. Chapter 3 summarizes the available fish habitat information. Chapter 4 summarizes water quality data. Chapter 5 provides information on water quantity. This chapter includes discussions on stream flow, groundwater inputs, instream flows, and water rights and water use. Current and future land use effects on basin flows are discussed in Chapter 6 and data gaps and recommendations are discussed in Chapter 7. Additional detailed information related to the various chapters is provided in the appendices.

A Level I Technical Assessment has previously been completed for the Upper Nisqually Basin (David Evans and Associates, 2000). The readers are referred to the David Evans report for details regarding the Upper Nisqually Basin.

ESHB 2514/ESHB 2496

The 1998 Washington State legislative session produced a number of bills aimed at salmon recovery including ESHB 2514 and ESHB 2496. The Watershed Management Act (ESHB 2514) was established to address the diminishing water availability and quality, and the loss of critical habitat for fish and wildlife in the state. The bill aims to develop watershed planning and management that will support economic growth and promote water availability and quality for the state. The bill provides a framework for local citizens, tribes, and state and local agencies to work together to develop watershed management plans for entire watersheds. As part of this process, a Watershed Assessment needs to be completed for each Water Resource Inventory Areas (WRIA) to evaluate water supply and use. The Level 1 assessment provides an assessment based on currently available information. Recommendations are made regarding data gaps and information needed to improve the understanding of water supply needs, instream flows, and water quality. These recommendations focus on information that is likely to affect the interpretation of data or provide information necessary to support basin planning efforts. As needed, a Level II assessment may be completed to fill those data gaps.

The 1998 state legislative session also produced ESHB 2496 the Salmon Recovery Planning Act. ESHB 2496 established, in part, a statewide process to identify habitat factors limiting salmon production in the state. This process requires assembly of a technical advisory group of basin experts, and utilizes a set of habitat criteria that will be applied statewide to produce what has been termed a Limiting Factor Analysis for each river.

LOWER NISQUALLY WATERSHED PLANNING GROUP

Representatives of the Lower Nisqually watershed have formed the Nisqually Watershed Planning Group. One of the primary purposes of this group is to complete the watershed assessment for the Lower Nisqually River. Participants in the Planning Group include:

- Washington Department of Ecology
- Thurston County
- Pierce County
- Nisqually Tribe
- City of Yelm
- City of Lacey
- City of Olympia
- City of Eatonville
- Elbe Water District
- Graham Hill Mutual Water
- Nisqually River Council

LOWER NISQUALLY WATERSHED ASSESSMENT STUDY AREA

The study area includes the Lower Nisqually watershed of WRIA 11 located in Pierce and Thurston Counties, Washington (Figure 1-1). The communities of Lacey, DuPont, Yelm, Roy, and Eatonville are located, at least partially, within WRIA 11. Fort Lewis is also present in the watershed. This facility occupies a large portion of the Muck Creek subwatershed. The study area is surrounded by Chamber-Clover Creek (WRIA 12) watershed on the north and Upper Chehalis and Cowlitz (WRIAs 23 and 26) watersheds to the south and east. The western portion of the study area lies within the Puget Trough section of the Pacific Border province and the eastern area includes the Western Cascades sections of the Sierra Cascade province.

For the purposes of this assessment, the WRIA has been sub-divided into seven sub-basins (Figure 1-1, Table 1-1). The Upper Basin is not included in this assessment. Each of the subbasins incorporate one or more major tributaries as well as some of the smaller side tributaries that drain to the mainstem Nisqually or Puget Sound. As a result, a portion of each basin does not drain directly to the primary tributaries. For instance, the McAllister subbasin includes all the area that drains to the McAllister as well as some area that drains to smaller tributaries that eventually drain to Puget Sound or the mainstem. Incorporation of the smaller tributaries into the larger subbasins was unavoidable. These could not be treated efficiently in any other manner.

Table 1-1. Sub-basin area.

Subbasin Name	Area (mi^2)
1. McAllister	39.2
2. Muck/Murray	181.5
3. Yelm	52.0
4. Toboton/Powe11/Lackamas	27.8
5. Tanwax/Kreger/Ohop	82.1
6. Mashel	89.2
Lower basin (subbasins 1-6) subtotal	*471.8*
7. Upper Basin	289.2
Entire WRIA	**760.9**

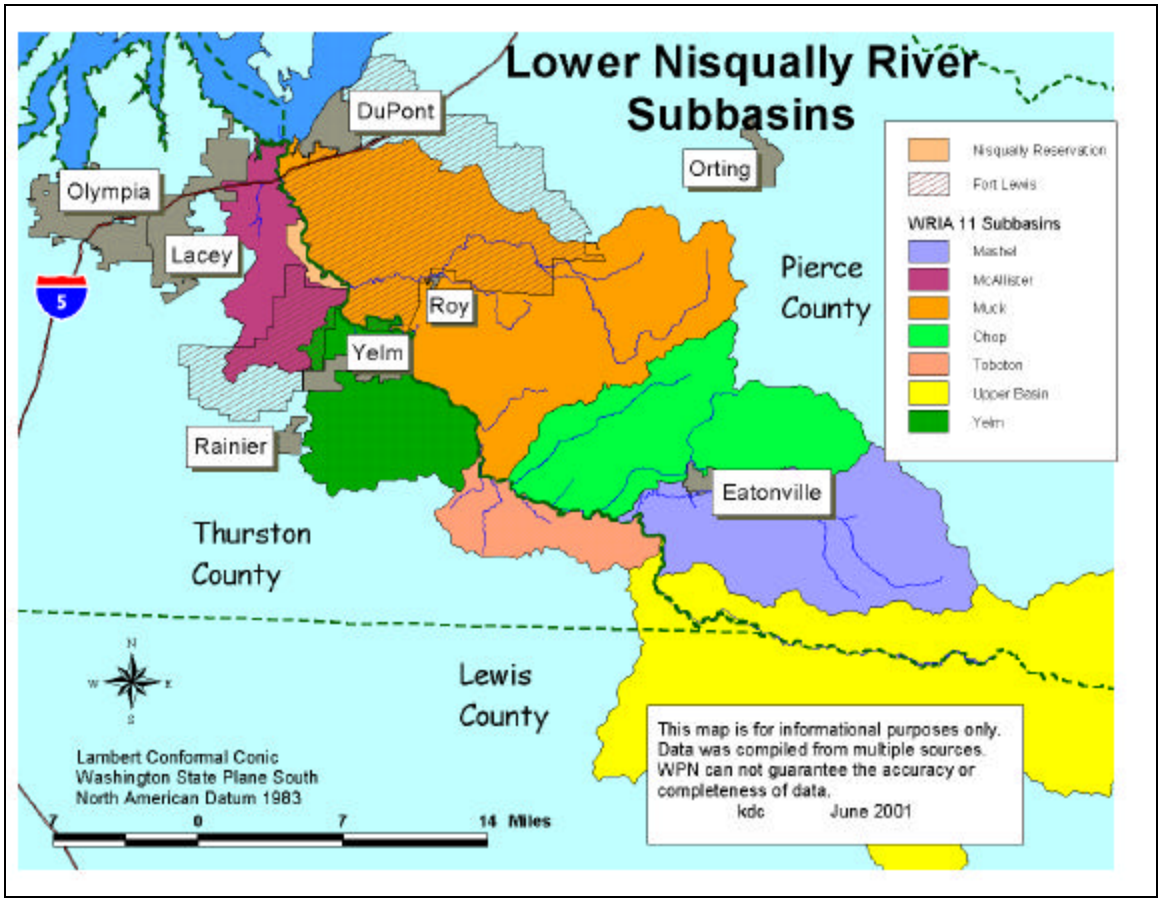

Figure 1-1. Water Resources Inventory Area (WRIA) 11 showing sub-basins used in this assessment. Data Sources: Washington Department of Natural Resources (WDNR): Sub-basins (modified from WAU coverage), fish-bearing streams, water bodies, and WRIA boundaries; Washington Department of Transportation (WDOT): county lines, city boundaries.